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Malewa Clean Water

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MALEWA CLEAN WATER PROJECT

Background

World Water Crisis:

- Here in America, we may not have to worry whether our water is contaminated with dangerous bacteria, but in other parts of the world, this is not taken for granted.
 - "Each year more than five million people die from waterborne disease"
 - "84 percent of water-related deaths are in children ages 0 - 14."
 - "98 percent of water-related deaths occur in the developing world."
 - "At any given time, half of the world's hospital beds are occupied by patients suffering from a water related disease."

Kenya:

- "Over half of Kenyans live below the poverty line"
- "Only 61 percent of the population has any access to safe water sources"



Map of Africa
Kenya Circled



Map of Kenya
Gilgil circled

Malewa:

- We are focusing on establishing a business selling purified water in the slums of Gilgil - a town in the region of Malewa.
 - People in the slums spend about fifth of their income on water from a local tap, or walk long distances to get less clean water from the local river.
 - The wages in Malewa peak at around 12,000 sh a month. Many are unemployed or work unskilled labor for only 5,000 sh a month.
 - The children in Malewa are very interested in learning to better themselves.
 - The Ngechu School and Kimbo School specifically offered to work with us to implement a safe water plan.



Malewa River- source of H₂O for
2000 person community



Water tank in slums

IHSAN:

- The Industry's Humanitarian Support Alliance, IHSAN, is a non-government organization (NGO) which works to "increase the availability of safe drinking water, adequate sanitation, hygiene, and related education".
- We have been in contact with IHSAN to design and implement our clean water plan in Malewa, Kenya.
 - Field Researcher
 - We had a field researched from IHSAN to go to Malewa to collect the data we used in designing the implementation plan



(above) school girls
carrying water jugs
(left) Purifying water



Better Water Maker (BWM)

- We use the BWM to purify the water in the business.
- Invented by Bob Bechtold
- Hand Crank Powers UV light which kills bacteria in water
- Limited to One water crank at schools
- Purifies a gallon/minute



reservoir at Kimbo School.

Obtain water

- We obtain water to purify from the following water sources
 - City collection points
 - City Check Point
 - Buy
 - Places by the schools
 - Rainwater harvesting system
 - Mawaka and Kimbo have reservoirs
 - Nearby Rivers



Kimbo School

Schools

- Students at schools will purify the water as part of their gym class or afterschool.
- To allow the student to use the BWM, they BWM must be part of a water education plan.
- 30min/day - 4 days a week they will purify water.



Girls carrying water on route from
Malewa River into Gilgil town

Distance

- The distance between the schools and the slums poses a considerable challenge
 - 2-4 km away.
- An initial investment is needed via micro-finance to bridge the distance
 - Taxi - 500 sh
 - Invest in carts



Goals

- Distribute Clean Water
- Enhance Water Education Program
- Bring in money

Project Introduction

- We're establishing a micro business in a third world country to distribute clean water in the slums.
- We will use schools in Malewa to run our business

Impact

- By expanding the project to other schools throughout Kenya we would ultimately take steps toward.
 - Ending the clean water crisis in Kenya
 - Enhance the awareness of water health throughout Kenya

Obtain Water

Purify

Transport

Distribute

Profit

Schools

- Enhancing the education in the participating schools by reinvesting the profits in
 - Books
 - Uniforms
 - Projects in the school
 - Refurbishing
 - Academic projects

Micro Loans

- Paying back the micro-loan which funded the initial start up cost

Storage

- We needed to find a safe, economical, and sustainable solution to water storage.
- Jerry Cans
 - Invest in large container for transporting
 - Pour into existing Jerry cans
- Eventually, we will provide newer and more sanitary containers to be entered into the mix.



Families lining up for water at the only water
collection point in Malewa, Kenya

Distribution

- We will sell and distribute the clean water in the slums.
- There is one water tap in these slums which prices water at:
 - 20L - 5 sh
 - Larger Bucket- 10 sh
- We will cut costs and waste by offering a 1 sh discount to those who bring their old containers to those who fill the water instead of getting a new one.

Making Project a Reality

Micro Loans

- In order to start this project we will have to make initial investments which will be paid for by micro loans

- Kiva
 - Lends money to entrepreneurs in developing countries
 - Empowers the countries to lift themselves out of poverty
- Optimnow.org
 - Part of Opportunity International (a non-profit organization)
 - Provides those that live in chronic poverty with the opportunity to change their lives
- Opportunity.org
 - Creates jobs, start small businesses, and strengthen communities among the poor
 - Their method is to work through indigenous partner organizations
- Unitus.com
 - An international non-profit organization that wants to reduce global poverty
 - Seeks out and partners with young, high-potential microfinance institutions
- Sba.gov
 - Created in 1953, to strengthen the economy of our nation
 - Helps Americans start, build, and grow businesses

Field Workers

- Malewa Trust
 - Malewa Trust, an NGO in Kenya, has offered to help us implement the device
 - The trust wants to create a plan for an environmental education, sustainable land management, and conservation of biodiversity in the Malewa area
- Schools
 - Mawaka (primary), Kimbo (primary), and Ngechu (secondary)
- The students will be purifying the water as part of an education program
- Help deliver the water to the slums
- Interning with IHSAN
 - The team wants to intern with IHSAN in Kenya (as well as the members from our partnering team- Roche- who are doing work with soap in Kenya)
- Implement the BWM ourselves